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## The pathophysiology of angiogenesis.

**Polverini PJ.**

Department of Oral Medicine, Pathology, and Surgery, University of Michigan School of Dentistry, Ann Arbor 48109-1078.

The formation of new capillary blood vessels, a process termed "angiogenesis", is one of the most pervasive and fundamentally essential biological processes encountered in mammalian organizations. Angiogenesis is an important event in a variety of physiological settings, such as embryonic development, chronic inflammation, and wound repair. It is a process that is tightly regulated in both time and space. Angiogenesis is driven by a cocktail of growth factors and pro-angiogenic cytokines and is tempered by an equally diverse group of inhibitors of neovascularization. Angiogenesis is also central to the etiology and pathogenesis of a number of pathological processes that include, among others, solid tumors, diseases of the eye, and chronic inflammatory disorders such as rheumatoid arthritis, psoriasis, and periodontitis. Based on recent work from several laboratories, it is now eminently clear that most if not all angiogenesis and vasoproliferative-dependent disease processes are not only a consequence of the unrestricted production of normal or aberrant forms of pro-angiogenic mediators but also the result of a relative deficiency in angiogenic-inhibitory molecules. In this review, I will describe how these multifunctional mediator systems function to coordinate and regulate the angiogenic response, and how disruption in the molecular controls that regulate the production of pro-angiogenic and angiostatic mediators leads to aberrant angiogenesis and disease. The implications of these findings in the development of novel therapeutic strategies for the treatment of diseases characterized by dysregulated angiogenesis will also be discussed.

### Publication Types:

- Review
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